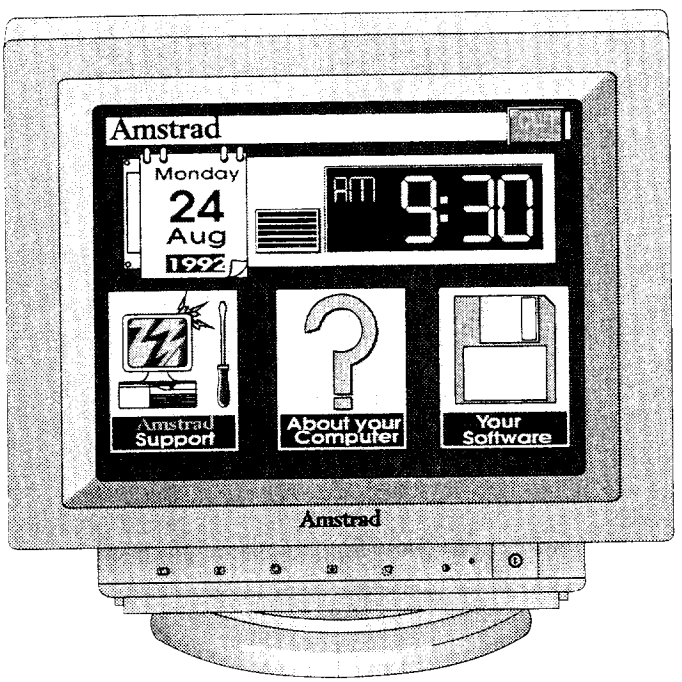
Amstrad



ALSO COVERS PC-14 DSM

PC14M28LR

PC14M39 Y2

SVGA MONITOR

SERVICE MANUAL

Contents

	Page
Contents , Technical Specifications & Safety Test	2
Alignment Instructions	3-7
Cabinet Parts List	8
Electrical Parts List	9-10
Main PCB Component Layout	11
CRT PCB Component Layout	12
PSU Schematic Diagram	13
Main Schematic Diagram 1/3	14
Main Schematic Diagram 2/3 & Waveforms	15
Main Schematic Diagram 3/3	16

Date of first publication August 1993.
Information published was latest available at the time of print.
Amstrad reserves the right to supply selective components.

Technical Specifications

Power Supply 220-240V AC 48-63Hz

Sync. Input
TTL Levels:

Mode	H-Sync	V-Sync	H-Freq/kHz	V-Freq/Hz
1	+	-	31.5	70
2	-	+	31.5	70
3	-	+	31.5	60
4	+	-	35.52	87 (I)
5	+/-	+/-	35-38	55-60

Signal Cable 15-Way Sub-Miniature "D" Type

CRT PC14M28LR 14" 0.28mm Dot Pitch
Anti-Glare, Low Radiation
LR is Low Radiation CRT & components fitted to comply to MPR II standard.
PC14M39 14" 0.39mm Dot Pitch

Operating Range Temperature: 10-35° C
Humidity: 20-85% (non condensing)

Weight 11.5kg

Video Input RGB Analogue video signal 0.71V Positive

User Controls Power On / Off
Contrast
Brightness
Width
V-Centre
Height (mode 5)
H-phase (mode 4,5)

Display Area 245mm wide x 183mm high

Dimensions 351mm (W) x 327mm (H) x 384mm (D)

SAFETY TEST

Please note: when any work is carried out on a set, the following safety tests must be carried out to ensure continued electrical safety.

1) Flash Test:
Test at 4kV between the live and neutral of the mains lead joined together and ALL accessible metal points on the exterior of the set.

2) Insulation Resistance Test:
Test between the live and neutral of the mains lead joined together and ALL accessible metal points on the exterior of the set to show resistance of at least 4M ohm.

In keeping with our policy of continually improving our service and the technical quality of our products, we reserve the right to change component type, manufacturers, sources of supply or technical specifications at any time.

Amstrad Plc.
BRENTWOOD HOUSE, 169 KINGS ROAD. BRENTWOOD ESSEX CM14 4EF

Note:

PC14M28LR has a magnetic cancellation coil fitted around the deflection yoke. When replacing the CRT, remove this coil and refit in the same way around the deflection yoke of the replacement CRT.

The monitor incorporates a number of adjustments which are listed below, and will have been correctly aligned before leaving the factory. Adjustments should only be carried out if necessary

Alignments

Main PCB

HT Adjust	RV832
B+ Adjust	RV503
VGA Frequency	RV429
30µs Monostable	RV406
13µs Monostable	RV407
Keystone	RV491
East / West Amplitude	RV450
H-Shift	SK403
V-Size (Master)	RV422
V-Frequency	RV303
V-Linearity	RV316
A1 / Screen Voltage	FBT
Focus	FBT

Video PCB

Red Gain	RV219
Green Gain	RV220
Blue Gain	RV221
Red Cut-Off	RV225
Green Cut-Off	RV226
Blue Cut-Off	RV227

All test patterns refer to SVGA test Programme, Issue 001, used in conjunction with a Trident MVGA-T8900a Video Card.

HT AND B+ SETTING

N.B. Number in square brackets refer to the calculator numeric keypad.
Numbers without brackets refer to the typewriter numeric keys.

Select MODE 3, BLANK RASTER. "3,F9" [1] from keyboard.
Select CONTRAST to minimum and BRIGHTNESS to DETENT.
Check the voltage at C819 is 110v ± 0.5v. Adjust RV832, if necessary.
Check the voltage at C425 is 84V ± 0.5v. Adjust RV503, if necessary.
for Y2 and Y2V chassis

VERTICAL HOLD

Select MODE 7, 50Hz Sync "7" from Keyboard.
Set CONTRAST to mid range and BRIGHTNESS to DETENT.
Turn VR303 (vertical hold) fully anti-clockwise. Then slowly turn RV303 clockwise until the display becomes stable. Stop turning RV303 immediately.

FOCUS SETTING

Set CONTRAST to mid range and BRIGHTNESS to DETENT.
Set Focus Pattern Green "3,F6, [5]" from keyboard.
Adjust Focus control so that the resolution is optimised.

HORIZONTAL CENTRE

Select MODE 3, BLANK RASTER "3,F9,[1]" from keyboard.
Set BRIGHTNESS to maximum
Check for a centred raster within ± 2.0mm.
Adjust the position of jumper SK403, if necessary.

HORIZONTAL PHASE (VGA)

Select FOUR BY FOUR GRID "3,F3,[8]" from keyboard.
Set contrast to mid-range and BRIGHTNESS to MAXIMUM.
Adjust RV429 (H. Freq.) to centre display image within the display consistent with a voltage of 4.0v ± 0.5v on IC404, pin 5.

VERTICAL LINEARITY

Set BRIGHTNESS to DETENT.
Select Square grid "3,F8" from keyboard.
Adjust RV316 (Vertical Linearity) for best linearity, if necessary.
Check that Vertical Linearity is better than 7%.

HORIZONTAL WIDTH

Select MODE 3, WHITE SCREEN, NO BORDER "3,f9" from keyboard.
Set Brightness to DETENT and Contrast to give 100 ± 20 Cd/m^2
Adjust RV451 USER WIDTH and check that a width of 245mm is available.
Set RV451 to DETENT.

VERTICAL SIZE

Select MODE 3 WITH SCREEN, NO BORDER "3,F9" FROM keyboard
Set BRIGHTNESS to DETENT and contrast to give 100 ± 20 Cd / m^2
Adjust RV422 (480 size) for 183mm ± 1mm display size.

Select mode 2 with screen , no border "2,F9" from keyboard.
Check the display size 183mm ± 3mm.

Select MODE 1 White Screen, No Border "1,F9" from keyboard.
Check for display size 183mm ± 3mm.

Select MODE 4 WHITE SCREEN, NO BORDER "4,f9" From Keyboard.
Adjust RV433 USER HORIZONTAL PHASE for a locked, central display.
Check for display size 183mm ± 3mm.

Select MODE 5 WHITE SCREEN, NO BORDER "5,F9" from keyboard.
Adjust RV433 USER HORIZONTAL PHASE for a locked display and check that 183mm display size can be obtained using RV409 SVGA SIZE USER CONTROL.
Set RV409 for 183mm ± 3mm display size.

VERTICAL CENTRE

SET CONTRAST TO MID RANGE and BRIGHTNESS to DETENT.
Select FOUR BY FOUR GRID "3,F3" from keyboard.
Adjust RV313 (Vertical Centre) for a centred display within ± 2.0mm.

GEOMETRIC DISTORTION

Select FOUR BY FOUR GRID "3,F3" from keyboard.
Check the total distortion.
Adjust RV450 E/W Amp for straight vertical edges, if necessary.
Adjust RV491 for a trapezoidal display.

VIDEO Cut-Off

Select MODE 3 BLANK SCREEN "3,F10" from keyboard.
Set BRIGHTNESS TO minimum.
! Check the screen emission is 3 ± 0.5 Cd/m^2. Adjust A1 if necessary.
Select Mode 3 WHITE BLOCK " 3,F1,[*]" from the keyboard.
Set BRIGHTNESS to DETENT and CONTRAST to give screen emission of 17 ± 1 Cd/m^2.
Using the cut-off presets adjust as required to obtain;

x = 0.281 ± 0.005
y = 0.311 ± 0.005

(Adjusting a minimum number of the presets to meet the required limit).
Do not make COARSE adjustment.

VIDEO GAIN

Select MODE 3 GREEN BLOCK "3,F1,[8],[5]" from keyboard.
Set BRIGHTNESS to DETENT and CONTRAST to MAXIMUM.
Set GREEN gain RV220 for a screen emission of 76 ± 1 Cd/m^2.

Select MODE 3 WHITE BLOCK "3,F1,[8]" from keyboard.
Without further adjustment to RV220, set RED and BLUE GAIN, RV219, RV221
to obtain a white balance of x = 0.281 ± 0.005 y = 0.311 ± 0.005 (Note the measurements)
Check the screen emission is 100 + 15/-10 Cd/m^2. If not, readjust RV220.
Reduce CONTRAST to give a screen emission of 17 ± 1 Cd/m^2.
Check the x and y co-ordinates are within ±0.015 of the measurement taken in Horizontal Phase (VGA) (at CONSTANT maximum).
If not using the MINIMUM of the adjustment, carefully re-adjust the appropriate Cut-Off preset (RV225, RV226, RV227) to bring the colour co-ordinates just within the limits stated below.
Verify the following conditions.

Screen brightness: "3,F1"	100 + 15/ - 10 Cd/m^2.	BRIGHTNESS DETENT. CONTRAST MAXIMUM.
Colour Point	x = 0.281 ± 0.015 y = 0.311 ± 0.015	BRIGHTNESS DETENT. 90 Cd/m^2 WHITE SCREEN
Colour Tracking	x = ± 0.015 y = ± 0.015	CONTRAST VARIABLES. 20 to 90 Cd/m^2.
Background Brightness: "3,F10"	3 ± 0.5 Cd/m^2.	BRIGHTNESS MAXIMUM. CONTRAST MINIMUM

FOCUS SETTING

Set CONTRAST to mid range and BRIGHTNESS to DETENT
Set Focus Pattern Green "3,F6, [5]" from keyboard.
Adjust Focus control so that the resolution is optimised

HORIZONTAL CENTRE

Select MODE 3, BLANK RASTER "3,F9,[1]" from keyboard.
Set BRIGHTNESS to maximum
Check for a centred raster within ± 2.0mm.
Adjust the position of jumper SK403, if necessary.

HORIZONTAL PHASE (VGA)

Select FOUR BY FOUR GRID "3,F3,[8]" from keyboard.
Set contrast to mid-range and BRIGHTNESS to MAXIMUM.
Adjust RV429 (H. Freq) to centre display image within the display consistent with a voltage of 4.0v ± 0.5v on IC404, pin 5.

VERTICAL LINEARITY

Set BRIGHTNESS to DETENT
Select Square grid "3,F8" from keyboard.
Adjust RV316 (Vertical Linearity) for best linearity, if necessary.
Check that Vertical Linearity is better than 7%.

HORIZONTAL WIDTH

Select MODE 3, WHITE SCREEN, NO BORDER "3,F9" from keyboard.
Set Brightness to DETENT and Contrast to give 100 ± 20 Cd/m^2
Adjust RV451 USER WIDTH and check that a width of 245mm is available.
Set RV451 to DETENT.

VERTICAL SIZE

Select MODE 3 WITH SCREEN, NO BORDER "3,F9" FROM keyboard.
Set BRIGHTNESS to DETENT and contrast to give 100 ± 20 Cd / m^2
Adjust RV422 (480 size) for 183mm ± 1mm display size.

Select mode 2 with screen , no border "2,F9" from keyboard.
Check the display size 183mm ± 3mm.

Select MODE 1 White Screen, No Border "1,F9" from keyboard.
Check for display size 183mm ± 3mm.

Select MODE 4 WHITE SCREEN, NO BORDER "4,F9" From Keyboard.
Adjust RV433 USER HORIZONTAL PHASE for a locked, central display.
Check for display size 183mm ± 3mm.

Select MODE 5 WHITE SCREEN, NO BORDER "5,F9" from keyboard.
Adjust RV433 USER HORIZONTAL PHASE for a locked display and check that 183mm display size can be obtained using RV409 SVGA SIZE USER CONTROL.
Set RV409 for 183mm ± 3mm display size.

VERTICAL CENTRE

SET CONTRAST TO MID RANGE and BRIGHTNESS to DETENT.
Select FOUR BY FOUR GRID "3,F3" from keyboard.
Adjust RV313 (Vertical Centre) for a centred display within ± 2.0mm.

GEOMETRIC DISTORTION

Select FOUR BY FOUR GRID "3,F3" from keyboard.
Check the total distortion.
Adjust RV450 E/W Amp for straight vertical edges, if necessary.
Adjust RV491 for a trapezoidal display.

VIDEO Cut-Off

Select MODE 3 BLANK SCREEN "3,F10" from keyboard.
Set BRIGHTNESS TO minimum.
! Check the screen emission is 3 ± 0.5 Cd/m^2. Adjust A1 if necessary.
Select Mode 3 WHITE BLOCK " 3,F1,[*]" from the keyboard.
Set BRIGHTNESS to DETENT and CONTRAST to give screen emission of 17 ± 1 Cd/m^2.
Using the cut-off presets adjust as required to obtain:
x = 0.281 ± 0.005
y = 0.311 ± 0.005
(Adjusting a minimum number of the presets to meet the required limit).
Do not make COARSE adjustment.

VIDEO GAIN

Select MODE 3 GREEN BLOCK "3,F1,[8],[5]" from keyboard.
Set BRIGHTNESS to DETENT and CONTRAST to MAXIMUM.
Set GREEN gain RV220 for a screen emission of 76 ± 1 Cd/m^2

Select MODE 3 WHITE BLOCK "3,F1,[8]" from keyboard.
Without further adjustment to RV220, set RED and BLUE GAIN, RV219, RV221 to obtain a white balance of x = 0.281 ± 0.005 y = 0.311 ± 0.005 (Note the measurements)
Check the screen emission is 100 + 15/-10 Cd/m^2 If not, readjust RV220.
Reduce CONTRAST to give a screen emission of 17 ± 1 Cd/m^2.
Check the x and y co-ordinates are within ±0.015 of the measurement taken in Horizontal Phase (VGA) (at CONSTANT maximum).
If not using the MINIMUM of the adjustment, carefully re-adjust the appropriate Cut-Off preset (RV225, RV226, RV227) to bring the colour co-ordinates just within the limits stated below.
Verify the following conditions.

Screen brightness: "3,F1"	100 + 15/ - 10 Cd/m^2	BRIGHTNESS DETENT. CONTRAST MAXIMUM.
Colour Point	x = 0.281 ± 0.015 y = 0.311 ± 0.015	BRIGHTNESS DETENT. 90 Cd/m^2 WHITE SCREEN
Colour Tracking	x = ± 0.015 y = ± 0.015	CONTRAST VARIABLES. 20 to 90 Cd/m^2
Background Brightness: "3,F10"	3 ± 0.5 Cd/m^2	BRIGHTNESS MAXIMUM. CONTRAST MINIMUM

N.B. In all measurements co-ordinate x must be less than y.

STATIC CONVERGENCE

Select MODE 3 SQUARE GRID MULTICOLOUR "3,F8,[9]" from keyboard.
Adjust CRT CONVERGENCE RINGS for best alignment of colour segments, if necessary.

VOLTAGE & WAVEFORM SUMMERY

POWER SUPPLY
Assuming normal operation

supply	voltage	measured at
+110v	110.0 ± 0.5v	CE819 Adj RV832
+21v	20.5 ± 0.5v	CE820
+12v	12.0 ± 0.5v	CE823
+6v	6.2 ± 0.2v	CE821

Derived Supplies

All checks and adjustments must be done in VGA mode 3 (31.5kHz).

IC801 supply +5v	12.5 ± 0.5v	CE813 *NON ISOLATED*
	5.0 ± 0.25	CE405
IC405 SUPPLY -15V	8.9V ± 0.2V	CE411
	-15.3 ± 2V	CE429 *31.5kHz Operation
Brightness Supply B+	-64.0 ± 5v	CE428
(31.5kHz)	84.0 ± 0.5v	CE425 *Black Screen*
		Adjust RV503 31.5kHz opereation
EHT	24.5 ± 1kV	CRT anode *CAUTION*

SETTINGS

30us Monostable: measure waveform timing at IC402 pin 13 / D412.
13ms Monostable: measure waveform timing at IC402 pin 12 / R496.

HORIZONTAL MONOSTABLE ADJUSTMENT
Select Sync Mode 3
Set RV406 for 1.3us ± 0.1us duration of TTL low on IC402 pin 13

VERTICAL MONOSTABLE ADJUSTMENT
Set RV407 for 13.0ms ± 0.5ms duration of TTL high on IC402 pin12

N.B. These are voltage measurements for correct operation using DVM only,

Warning: All measurements are with respect to mains earth unless otherwise indicated. High voltages exist on the primary side of the power supply, testing should only be carried out with the unit connected to the mains supply via an isolation transformer.

Test Point		Voltage
PSU		
D802 cathode with respect to pin 5 ic801		335v dc
T801 pin 1 with respect to pin 5 ic801		335v dc
IC801 pin 7 with respect to pin 5 ic 801	12.5v dc	
D813 cathode		110v dc
D814 cathode		21v dc
IC803 output		12v dc
D815 cathode		6.2v dc
D416 cathode		5v dc
B+ Regulator		
R501 (both ends)		-260v dc
D502 cathode		84v dc
Mode Detection		
IC403 pin 6,7	(VGA mode 1)	< 0.1v dc
IC403 pin 5	(VGA mode 2)	< 0.1v dc
IC403 pin 4	(VGA mode 3)	< 0.1v dc
TR416 collector	(IBM 8514/a mode)	< 0.1v dc
IC403 pin 9-12	(SVGA 800x600 mode)	< 0.1v dc
Line Stage		
IC404 pin 6		8.8v dc
IC 404 pin 5		4v ± 1v dc
T402 pin 2		84v dc
R441 (both end)		20.5v dc
D410 anode		-15v dc
CE428 cathode		-55v dc

N.B. In all measurements co-ordinate x must be less than y.

STATIC CONVERGENCE

Select MODE 3 SQUARE GRID MULTICOLOUR "3,F8,[9]" from keyboard.
Adjust CRT CONVERGENCE RINGS for best alignment of colour segments, if necessary

VOLTAGE & WAVEFORM SUMMERY

POWER SUPPLY
Assuming normal operation

supply	voltage	measured at
+110v	110.0 ± 0.5v	CE819 Adj RV832
+21v	20.5 ± 0.5v	CE820
+12v	12.0 ± 0.5v	CE823
+6v	6.2 ± 0.2v	CE821

Derived Supplies

All checks and adjustments must be done in VGA mode 3 (31.5kHz).

IC801 supply +5v	12.5 ± 0.5v	CE813 *NON ISOLATED*
	5.0 ± 0.25	CE405
IC405 SUPPLY -15V	8.9V ± 0.2V	CE411
	-15.3 ± 2V	CE429 *31.5kHz Operation
Brightness Supply B+	-64.0 ± 5v	CE428
(31.5kHz)	84.0 ± 0.5v	CE425 *Black Screen*
		Adjust RV503 31.5kHz opereation
EHT	24.5 ± 1kV	CRT anode *CAUTION*

SETTINGS
30us Monostable: measure waveform timing at IC402 pin 13 / D412.
13ms Monostable: measure waveform timing at IC402 pin 12 / R496.

HORIZONTAL MONOSTABLE ADJUSTMENT
Select Sync Mode 3
Set RV406 for 1.3us ± 0.1us duration of TTL low on IC402 pin 13

VERTICAL MONOSTABLE ADJUSTMENT
Set RV407 for 13.0ms ± 0.5ms duration of TTL high on IC402 pin12

N.B. These are voltage measurements for correct operation using DVM only.

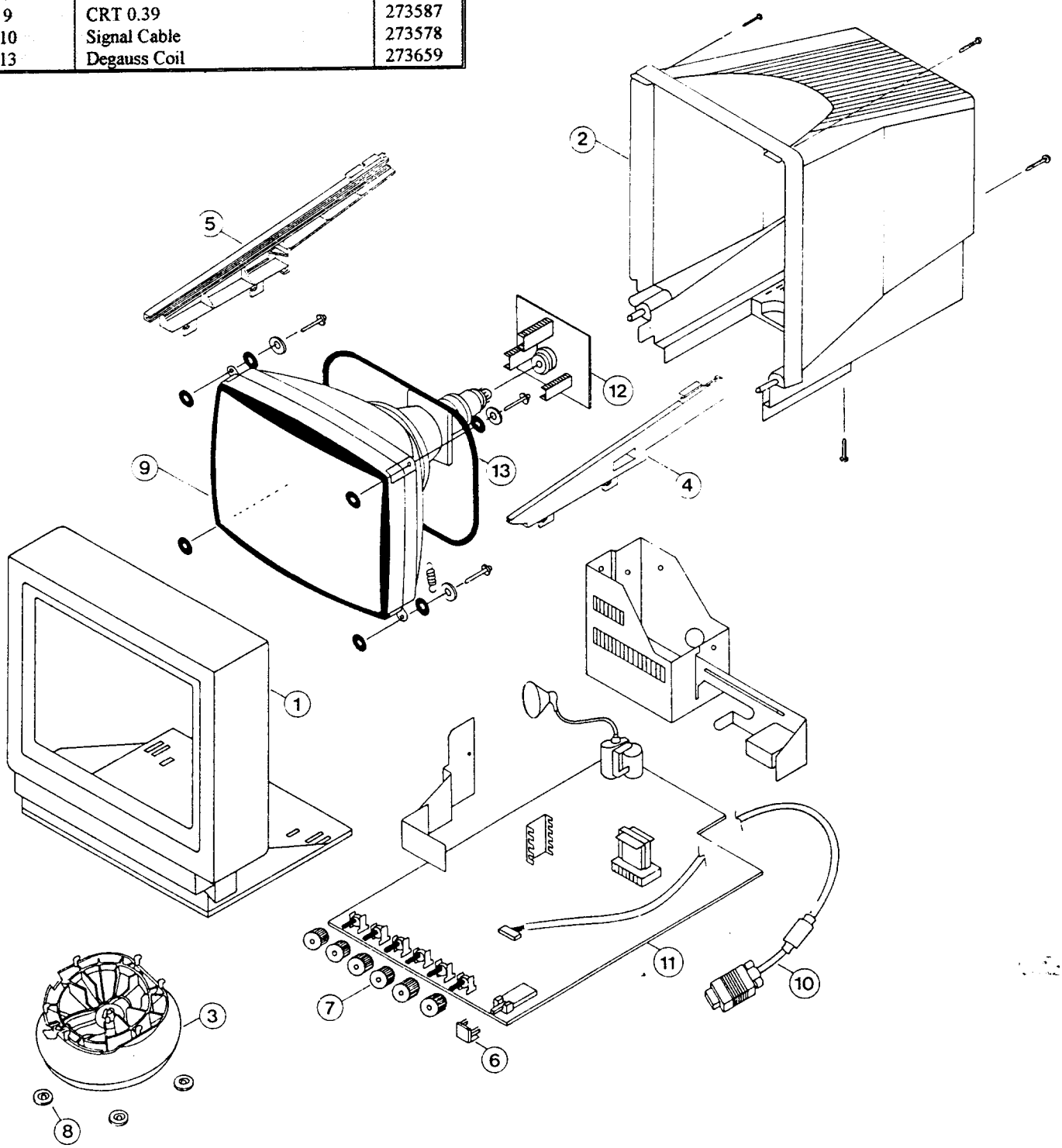
Warning. All measurements are with respect to mains earth unless otherwise indicated.
High voltages exist on the primary side of the power supply, testing should only be carried out with the unit connected to the mains supply via an isolation transformer.

Test Point		Voltage
PSU		
D802 cathode with respect to pin 5 ic801		335v dc
T801 pin 1 with respect to pin 5 ic801		335v dc
IC801 pin 7 with respect to pin 5 ic 801		12.5v dc
D813 cathode		110v dc
D814 cathode		21v dc
IC803 output		12v dc
D815 cathode		6.2v dc
D416 cathode		5v dc
B+ Regulator		
R501 (both ends)		-260v dc
D502 cathode		84v dc
Mode Detection		
IC403 pin 6,7	(VGA mode 1)	< 0.1v dc
IC403 pin 5	(VGA mode 2)	< 0.1v dc
IC403 pin 4	(VGA mode 3)	< 0.1v dc
TR416 collector	(IBM 8514/a mode)	< 0.1v dc
IC403 pin 9-12	(SVGA 800x600 mode)	< 0.1v dc
Line Stage		
IC404 pin 6		8.8v dc
IC 404 pin 5		4v ± 1v dc
T402 pin 2		84v dc
R441 (both end)		20.5v dc
D410 anode		-15v dc
CE428 cathode		-55v dc

PC14M28LR / PC14M39 Y2
Cabinet Parts List

Ref. No.	Description	Pt. No.
1	Front Cabinet Assy PC14M28LR	274239
1	Front Cabinet Front PC14M39 Y2	273572
2	Rear Cabinet Assy PC14M28LR	273584
2	Rear Cabinet Assy PC14M39 Y2	273573
3	Stand Assy	273574
4	Chassis Rail L	273656
5	Chassis Rail R	273657
6	Knob Power On Off	273658
7	Knob Control	273575
8	Foot Rubber	273630
9	CRT 0.28	274233
9	CRT 0.39	273587
10	Signal Cable	273578
13	Degauss Coil	273659

CABINET EXPLODED VIEW



Electrical Parts List

Ref.No.	Description	Pt. No
	ICs	
IC201	IC M51387P	175652
IC301	IC TDA1675A	273660
IC401	IC 74LS86	175935
IC402	IC 74LS123	176642
IC403	IC 74LS156	273661
IC404	IC LM1391N	273662
IC405	IC TDA8146	273663
IC801	IC UC3842AN	274059
IC802	IC TLP731-LF2	194187
IC803	IC 78M12 REG	273664
IC804	IC TL431CLP	272290
	Transistors	
TR205-207	TR 2SD1610C / 2SC3955D	273665
TR208-210	TR 2SD468C	193513
TR301,401-403 405,410,412 416-418,802 803,502	TR BC547C	241116
TR404,411 413,419,420 503	TR BC557	273599
TR406	TR 2SD667AC	273602
TR407	TR BU2508AF	273601
TR501	TR MPSA43	273603
TR504,414	TR TIP31E	273600
TR505	TR MPSA93	273604
Q801	TR SMP4N60	273605
	Diodes	
D301,412,413 ⚠	D 1N4002	175543
D302	DZ C2V7 1/2W	175767
D303,404-408 414,419,421 817-820,823	D 1N4148	270754
D401,410,411 501,502,807 810,812	D BYD33G	273607
D402	D BY328	270754
D403	D BYD73F	273608
D415 ⚠	DZ C33V 1/2W	273609
D416 ⚠	DZ C4V7 1/2W	175021
D417	LED GREEN	273617
D418,805,821	Thyrister TICP106D	273615
D422	DZ C9V1 1/2W	171493
D801-804	D BY133GP	273611
D806,822	D BYD33M	273614
D808	D RGP15M	273612
D809	DZ C16V 1/2W	273610
D813,814	D BY399	273618
D815	D SB140	273613
D825,826,503 ⚠	D 1N4003	157656

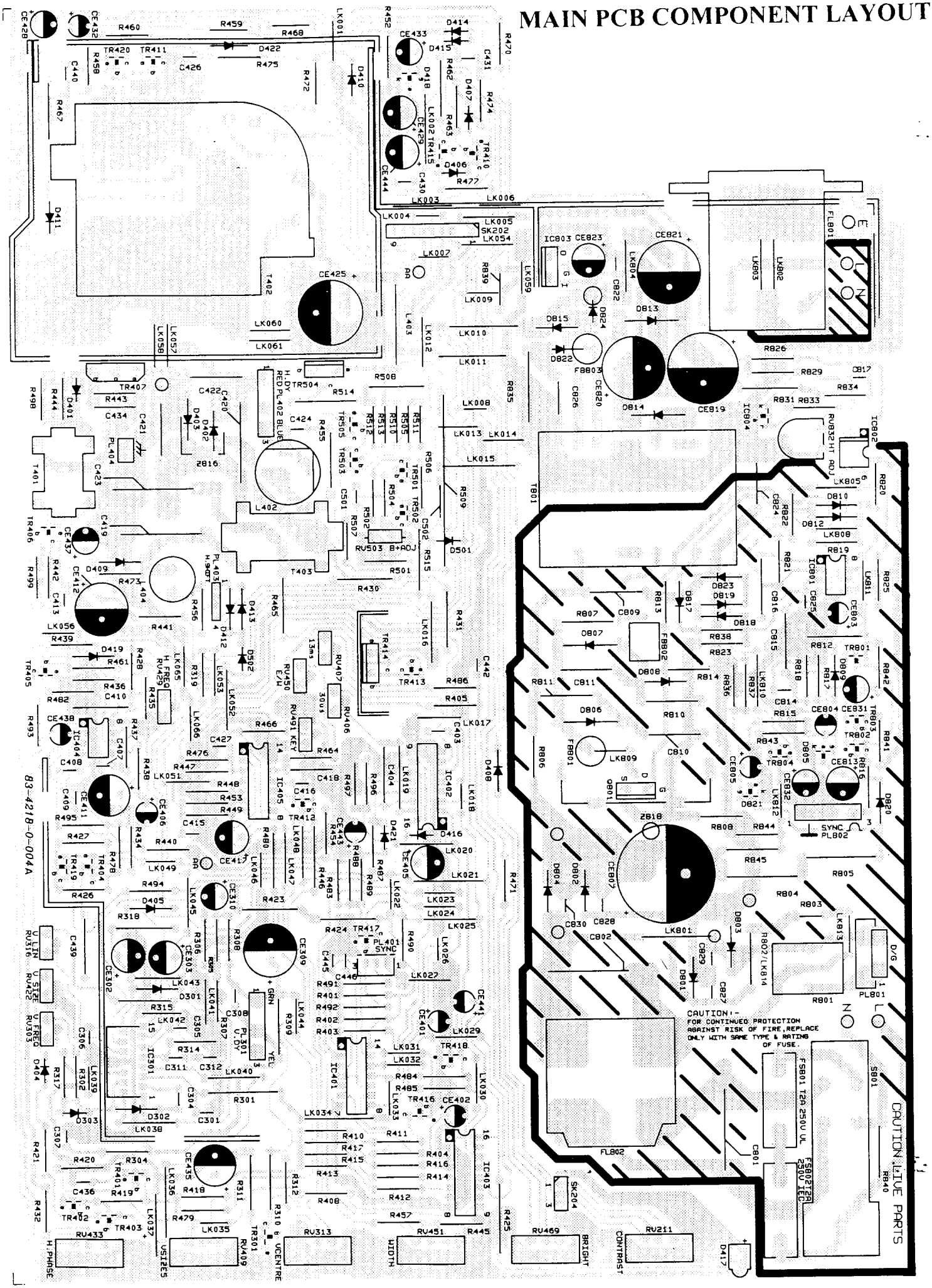
Ref.No.	Description	Pt. No
	Coils	
L204,205 ⚠	Coil 33uH Choke TAL04T	273667
L402	Coil Line Linearity	273619
L403	Coil 22uH Choke	273669
L4004	Coil 700uH 7679	273670
FL801	Coil Line Filter	273621
FL802	Coil Line Filter TLF-011A	273620
T401	Tx Line Drive	273622
T402 ⚠	Tx Flyback 7789	274237
T403	Tx Diode Modulator	273623
T801 ⚠	Tx Switch MODE0139-3	273624
	Variable Resistors	
VR219-221 225-227	VRSF 10k Ω 3179 Linear RGB	273672
VR303,406 450,491	VRSF 10k Ω 3199	273673
VR316	VRSF 100k Ω Linear V Linearity	273674
VR211,313 409,451	VRot 10K Ω L'r Hp,Vs,Vc,W,B,C	273671
VR407,422	VRSF 47k Ω Linear	273675
VR503	VRSF 50k Ω Linear 20%	273675
VR429	VRSF 4.7k Ω Linear	273676
VR433	VROT 100k Ω 3213 H Phase	274247
VR469	VROT 100k Ω 3206 Brightness	273677
VR832	VRSF 470 Ω 3173 HT Adj.	273678
	Miscellaneous	
SK901 ⚠	CRT Socket CVT3240-1251 2070	274238
S801 ⚠	Switch Power On Off 4074	273626
F801 ⚠	Fuse T2A 250V	240082
R801 ⚠	Thermister De-Gauss 3569	273595
R803	Thermister 15 Ω NTC 5313	273596
G204	Spark Gap	273627
CRT 14"	M34AFA60X14 PC14M28LR	274233
CRT 14"	E2971B22TC54ET PC14M39 Y2	273587
	Signal Cable	273578
	Mains Lead	274248
	Cancellation Coil PC14M28LR Y2V	274249

Description	Ref. no.	Pt. No.
	Resistors	
	Carbon	
1 Ω 1/4w	R307 M28LR only	
270 Ω 1/2w	R309 M39 Y2 only	
470 Ω 1/2w ⚠	R256,257,258	241520
680 Ω 1/2w	R309 M28LR only	
1k Ω 1/2w	R260	
1.8k Ω 1/4w	R446	
180k Ω 1w	R835	
	Metal Film	
0.33 Ω 1/2w ⚠	R806	273593
0.68 Ω 1/2w	R307 M39 Y2 only	
1.8 Ω 1/2w	R444,498	
4.7 Ω 1/2w ⚠	R261,441,465,472,	273590
8.2 Ω 2w	R514	273686
220 Ω 1/2w ⚠	R501	241372
820 Ω 1/2w	R442,499	
1.5k Ω 1w	R807	176339
3k Ω 2.5w ⚠	R239,241,243	274234
5.6k Ω 1/4w	R234	
16k Ω 1/4w	R232	
33k Ω 1/4w	R416	273690
33k Ω 1/2w	R505	176331
43k Ω 1/4w	R414	193716
51k Ω 1/4w	R410,412	273692
100k Ω 1/4w	R418,507	273693
	Metal Oxide	
0.33 Ω 1w ⚠	R808	271444
56k Ω 3w	R805	274235
	Wire Wound	
3.3 Ω 4w	R802	273592
68 Ω 1.5w	R839	273695
150 Ω 7w	R509	273696
1k Ω 4w	R810	273697
8.2k Ω 4w	R811	273698
	Metal Glaze	
270k Ω 1/2w ⚠	R840	273594

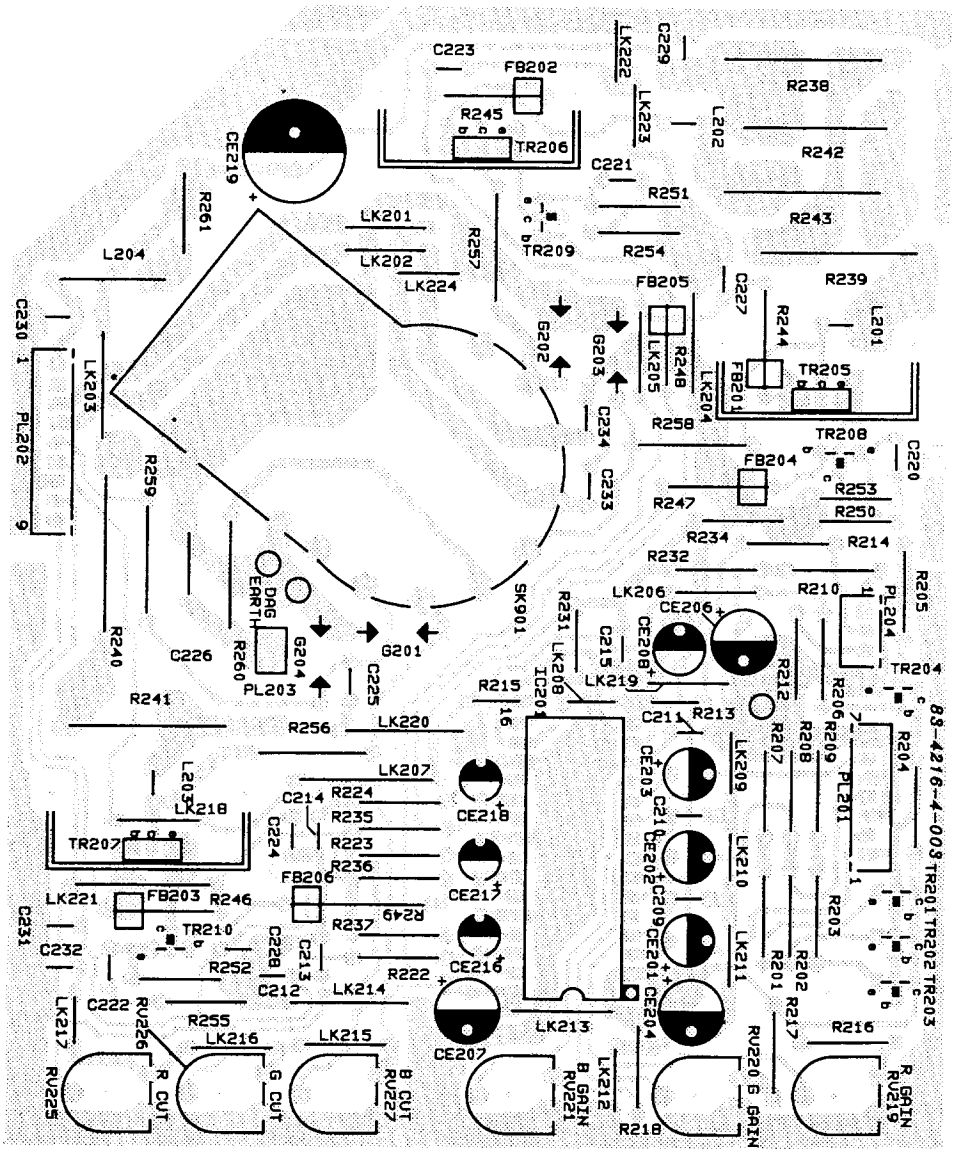
Description	Ref. no.	Pt. No.
	Capacitors	
	Metal Poly	
0.01µF 400v	C409,431,501	273701
0.022µF 250v	C413	273702
0.022µF 400v	C502	273703
0.022µF 630v	C826	273704
0.033µF 250v	C229,230	273705
0.1µF 400v	C809	273706
0.47µF 63v	C403,415	178047
	Electrolytic	
10µF 160v	CE219	170608
100µF 400v	C807	270614
220µF 160v	CE819	170851
	Ceramic	
100pF 400v	C225	273715
180pF	C222	
220pF	C220,221	273717
470pF plate	C825	273718
0.01µF 63v	C209-215	273719
0.01µF 2kv ⚠	C226	273716
	Polystyrene	
470pF 630v	C439	273708
680pF 1.6kv	C811	273709
0.0033µF 160v	C404,410,815,816	273710
	Polypropylene	
680pF 1.6kv	C422	273709
0.0036µF 1.6kv	C420 M28LR only	273711
0.033µF 630v	C810	273713
0.047µF 1.6kv	C420 M39 Y2 only	
0.012µF 630v	C421 M28LR only	273712
0.015µF 630v	C421 M39 Y2 only	
0.82µF 160v	C419 M28LR only	273714
1µF 250v	C419 M39 Y2 only	
	Line Across	
0.0033µF 400v ⚠	C824	
1µF 250v ac ⚠	C801,802	

Amstrad reserves the right to supply selective components

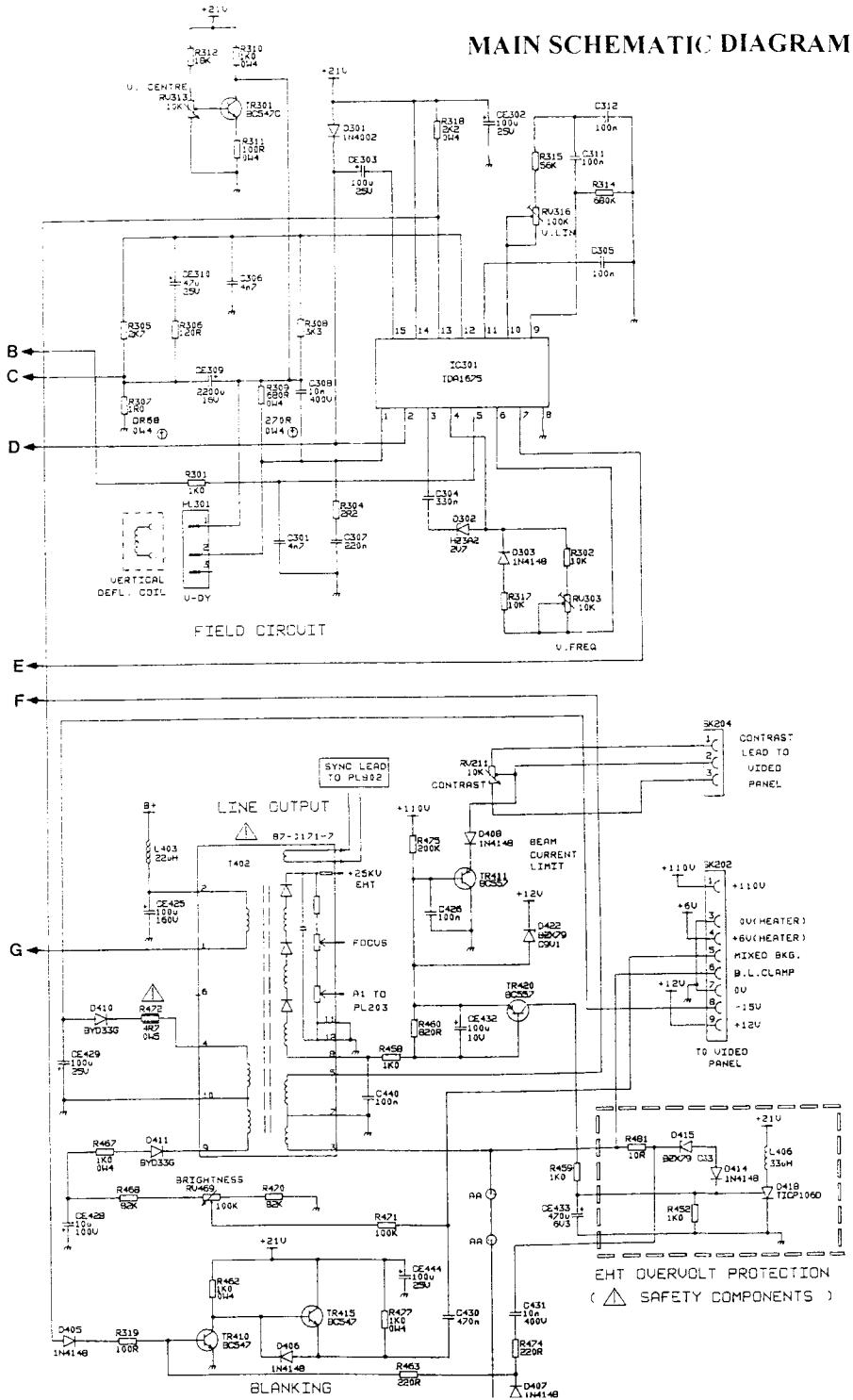
MAIN PCB COMPONENT LAYOUT



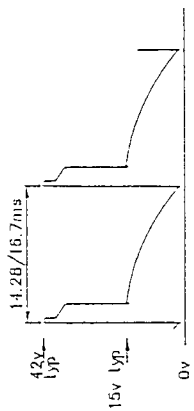
CRT PCB COMPONENT LAYOUT



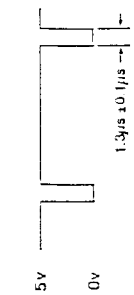
MAIN SCHEMATIC DIAGRAM 2/3 & WAVEFORMS



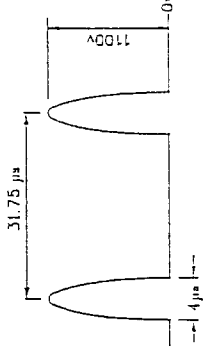
FIELD OUTPUT WAVEFORM
Measured at IC301 pin 1



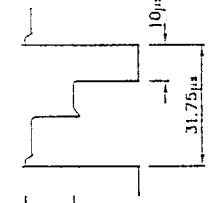
30µs MONOSTABLE
Measured at IC402 pin 13/D421



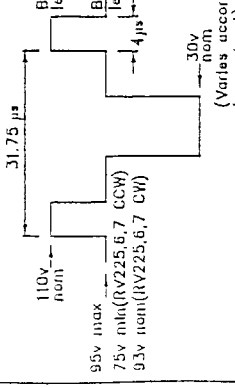
LINE OUTPUT WAVEFORM
Measured at TR407 collector



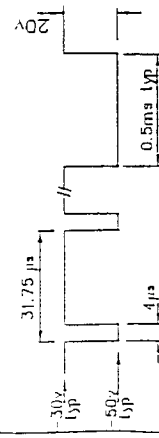
SMPS WAVEFORM
Measured at Q801 drain (with isolated mains supply)



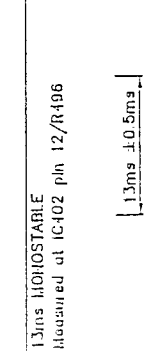
VIDEO WAVEFORM (WHITE BOX)
Measured on R.G.B. cathodes of CRT.



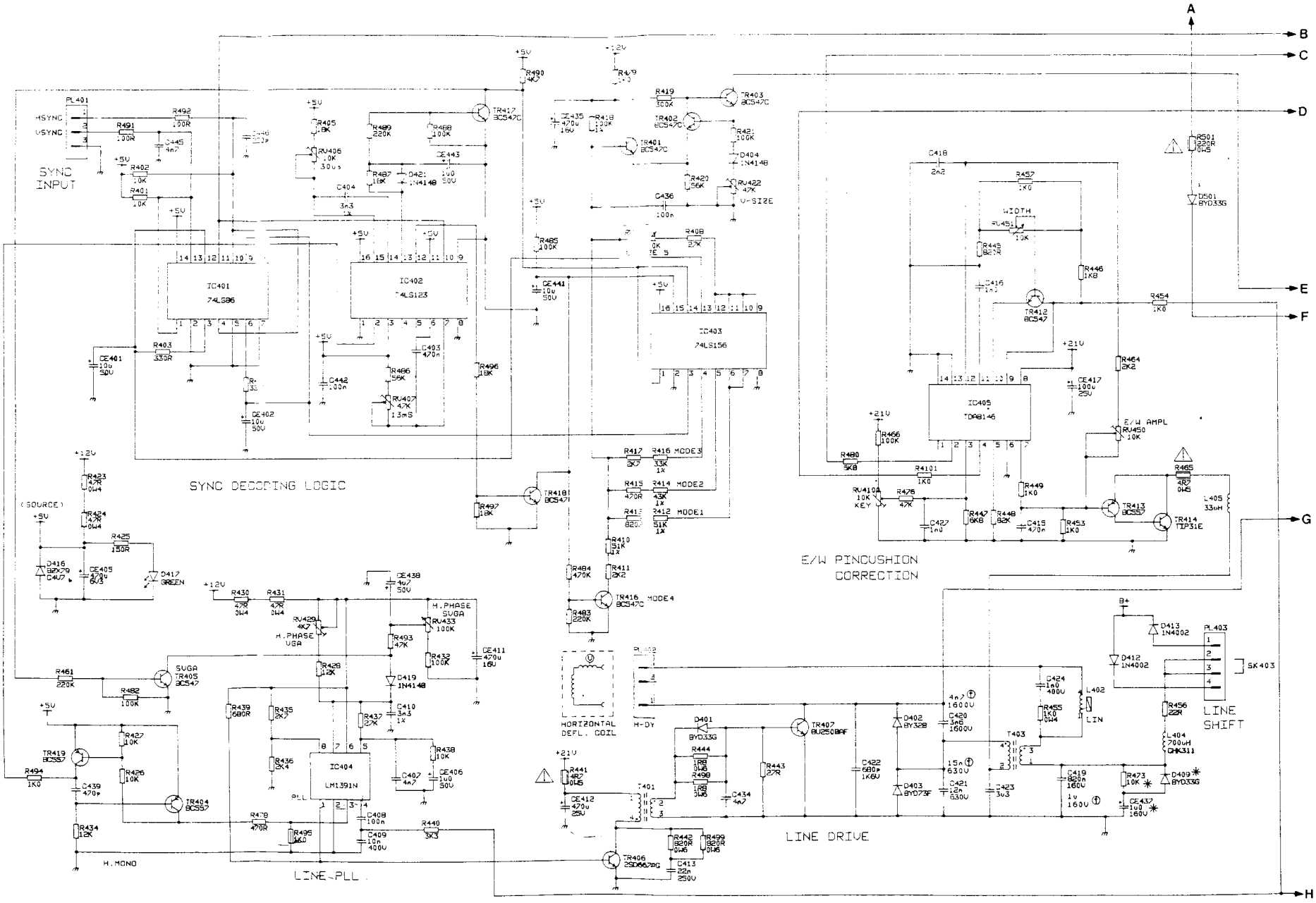
GRID 1 WAVEFORM, BRIGHTNESS & BLANKING
Measured at SK202 pin 5



13ms MONOSTABLE
Measured at IC402 pin 12/R496



MAIN SCHEMATIC DIAGRAM 1/



PSU SCHEMATIC DIAGRAM

MONITOR CHASSIS TYPES Y,Y2U AND [illegible]

79-1536-5-002

✱ - NOT FITTED
● - 110V OPTION
☒ - NOT FITTED ON 110V
① - USED WITH Y CHASSIS 0.39 CRT AND ALL Y2 CHASSIS
② - CANCELLATION COIL FITTED ON Y2U CHASSIS ONLY
⚠ - CRITICAL SAFETY COMPONENT

NOTE: B+ VOLTAGE VARIES WITH CHASSIS TYPE (SEE SERVICE MANUAL FOR DETAILS)

SAFETY AND ISOLATION.

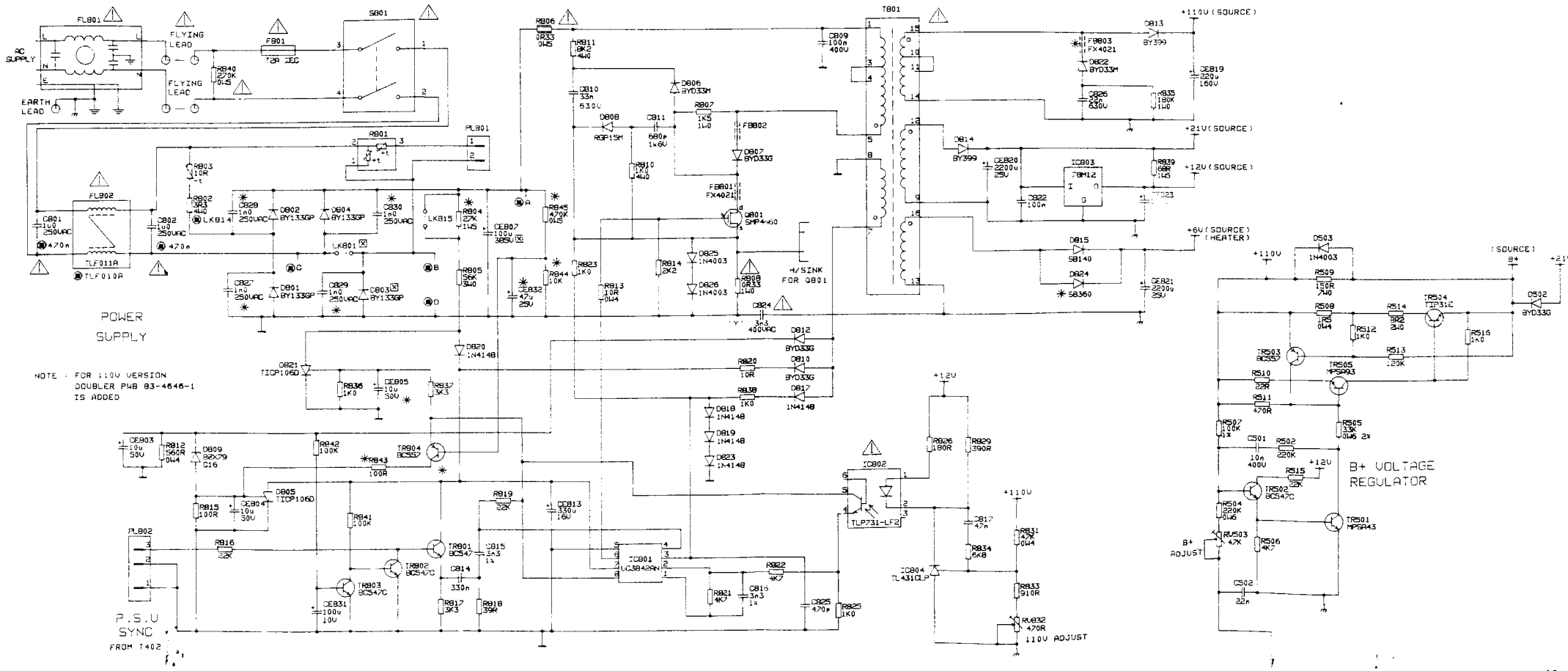
THE POWER SUPPLY IS ALWAYS LIVE REGARDLESS OF THE MAINS SUPPLY POLARITY. THEREFORE, FOR SERVICING, THE MONITOR SHOULD BE SUPPLIED THROUGH A MAINS ISOLATION TRANSFORMER.

THE POWER SUPPLY REMAINS CHARGED FOR ABOUT 30 SECS AFTER SWITCHING OFF. AVOID TOUCHING THIS AREA DURING THIS TIME.

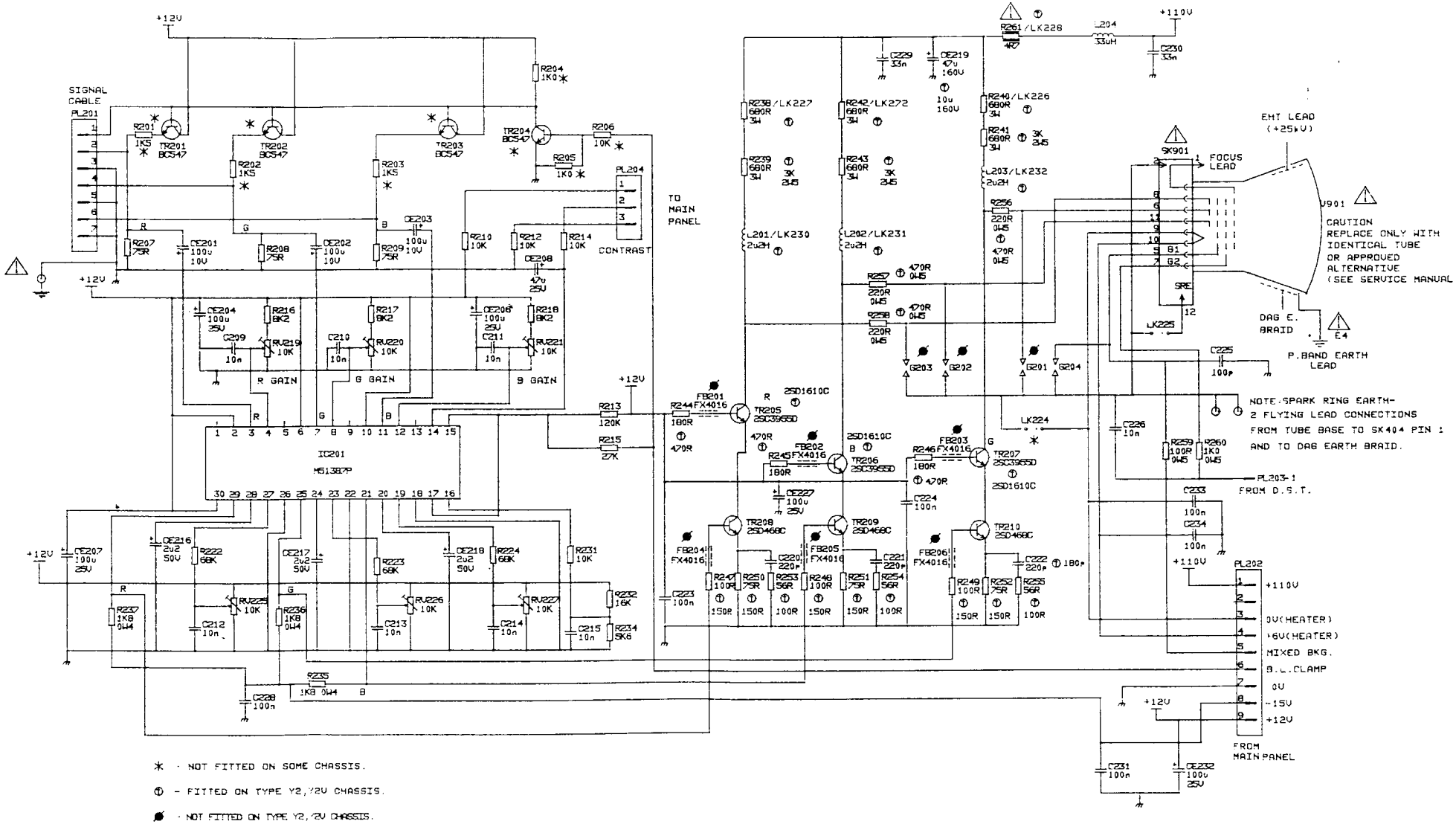
MOST OF THE MONITOR, OTHER THAN THE POWER SUPPLY, IS ISOLATED FROM THE MAINS BY TB01,IC802,C824 AND AN AIR GAP OF 8MM OR MORE. TO MAINTAIN SAFETY, ENSURE THAT AFTER REPAIR THE AIR GAPS ARE NOT REDUCED BY PROTRUDING WIRES ETC.

COMPONENTS MARKED ⚠ ON THE PARTS LIST OR CIRCUIT DIAGRAM ARE SAFETY APPROVED TYPES AND SHOULD BE REPLACED ONLY WITH APPROVED COMPONENTS AS GIVEN ON THE PARTS LIST.
IT IS RECOMMENDED THAT OTHER REPLACED PARTS SHOULD BE OF THE TYPE ORIGINALLY FITTED, PARTICULARLY RESISTORS STOOD OFF THE PRINTED BOARD.

FAILURE TO OBSERVE THE ABOVE MAY RENDER THE CHASSIS AND EXTERNAL ACCESSIBLE PARTS LIVE, OR CAUSE OTHER HAZARDS.



MAIN SCHEMATIC DIAGRAM 3/3



* - NOT FITTED ON SOME CHASSIS.

Ⓣ - FITTED ON TYPE Y2,Y2V CHASSIS.

Ø - NOT FITTED ON TYPE Y2,Y2V CHASSIS.